WHAT IS CLAIMED IS:

1. An improved Diesel exhaust filter element of the type having a rigid porous wall portion, the porous wall portion having a first side and a second side, the porous wall portion being coated with a precious metal catalyst and a NO_x absorbent, such that when exhaust gas from a Diesel engine is flowed through the rigid porous wall from the first side to the second side, the exhaust gas containing excess oxygen, NOx and soot, the soot in the exhaust gas is trapped within the rigid porous wall and catalytically oxidized to carbon dioxide, the NO is catalytically oxidized to NO_2, which NO_2 is then absorbed by the NO_x absorbent, and such that when the exhaust gas contains excess hydrocarbon and carbon monoxide, then the NO_x absorbent is regenerated and the remaining hydrocarbon and carbon monoxide are catalytically converted to nitrogen and carbon dioxide, wherein the improvement comprises: the rigid porous wall comprising an acicular ceramic.

2. The improved Diesel exhaust filter element of Claim 1, wherein the NO_x absorbent is comprised of a barium salt.

3. The improved Diesel exhaust filter element of Claim 2, wherein the precious metal catalyst is comprised of at least one of platinum, rhodium and palladium.

4. The improved Diesel exhaust filter element of Claim 1, wherein the acicular ceramic is comprised of acicular mullite.

5. The improved Diesel exhaust filter element of Claim 3, wherein the acicular ceramic is comprised of acicular mullite.

6. An improved Diesel exhaust filter element of the type having a rigid porous wall portion, the porous wall portion having a first side and a second side, such that when exhaust gas from a Diesel engine is flowed through the rigid porous wall from the first side to the second side, soot in the exhaust gas is trapped within the rigid porous wall, wherein the improvement comprises: the rigid porous wall comprising three layers, the first layer being adjacent the first side of the rigid porous wall, the first layer comprising a Diesel

oxidation catalyst, the third layer being adjacent the second side of the rigid porous wall, the third layer comprising a three way catalyst, the second layer being between the first layer and the third layer, the second layer comprising a nitrogen oxide adsorber, the second layer comprising an acicular ceramic.

7. The improved Diesel exhaust filter element of Claim 6, wherein the acicular ceramic is acicular mullite, the Diesel oxidation catalyst is comprised of platinum, wherein the nitrogen oxide adsorber is comprised of a barium salt, and wherein the three way catalyst is comprised of one or more of platinum, rhodium or palladium.

8. An improved Diesel exhaust filter element of the type having a rigid porous wall portion, the porous wall portion having a first side and a second side, such that when exhaust gas from a Diesel engine is flowed through the rigid porous wall from the first side to the second side, soot in the exhaust gas is trapped on and within the rigid porous wall, wherein the improvement comprises: the rigid porous wall comprising two layers, the first layer being adjacent the first side of the rigid porous wall, the first layer comprising a Diesel oxidation catalyst, the second layer being between the first layer and the second side of the rigid porous wall, the second layer comprising a nitrogen oxide adsorber and a three way catalyst, the second layer comprising an acicular ceramic.

9. The improved Diesel exhaust filter element of Claim 8, wherein the first layer comprises platinum and wherein the second layer comprises barium salt, and at least one of platinum, rhodium or palladium and wherein the acicular ceramic is acicular mullite.

10. A process for depositing precipitated metal ions on the surfaces of a rigid porous wall, comprising the steps of: (a) forming a liquid solution of metal ions, a gelling agent and a precipitating agent in a solvent, the concentration of gelling agent being sufficient to gel the liquid solution at an elevated temperature, the precipitating agent being unstable at elevated temperature so that the precipitating agent decomposes to produce a product that precipitates at least a portion of the metal ion to form a precipitated metal ion; (b) filling

at least a portion of the pore volume of the rigid porous wall with the liquid solution of metal ions, a gelling agent and a precipitating agent in a solvent to form a filled structure; (c) elevating the temperature of the filled structure to gel the liquid solution of metal ions, a gelling agent and a precipitating agent in a solvent and to precipitate metal ion; (d) further elevating the temperature of the filled structure to vaporize the solvent and the gelling agent from the filled structure leaving behind precipitated metal ion deposited on at least a portion of the surfaces of the rigid porous wall.